

# NEURAL NETWORK CONFIGURATION FOR POLLEN ANALYSIS

Viloria, Amelec; Mercado, Darwin; Lezama, Omar Bonerge Pineda

## Abstract

Palynology is a botanical discipline devoted to the study of pollen and spores [1], focusing mainly on the analysis of the external morphology that presents structural patterns different from those of the variations in the exine, which is the external wall of the pollen grains. The study and microscopic analysis of its symmetry, wall opening, contour, shape, size, etc., have a taxonomic value and allows distinguishing different taxa at different levels: family, genera, species. The study of pollen grains is a difficult task, in its different phases, from small microscopic samples. The analysis of these is an important source of information for many scientific and industrial applications, making palynology a valuable tool for various areas of knowledge [1]. In palynology, neural networks have been successfully applied for the classification of pollen grains. For this purpose, RPROP was selected as a neural network training algorithm for the classification of a previously reported dataset.

## Keywords

Genetic algorithm, Neural network configuration, Pollen analysis